

What is claimed is:

1. An antenna duplexer comprising:
 - an input terminal;
 - a transmission filter including a surface acoustic wave (SAW) filter
 - 5 having an input port connected to said input terminal;
 - a phase shifter having an input port connected to an output port of said transmission filter;
 - a reception filter having an input port connected to an output port of said phase shifter;
 - 10 an output terminal connected to the output port of said reception filter; and
 - an antenna terminal connected between said transmission filter and said phase shifter,
 - wherein said transmission filter has a power durability at said
 - 15 input terminal, the power durability being equal to or larger than a power durability at said antenna terminal.

2. The antenna duplexer of claim 1, wherein said SAW filter has a circuit being identical as seen both from the input port thereof and from 20 the output port thereof.

3. The antenna duplexer of claim 1,

wherein said SAW filter includes:

- 25 a substrate;
- a SAW resonator disposed on said substrate; and
- a conductor pattern disposed on said the substrate, said conductor pattern being connected to said SAW resonator, and

wherein a layout of said SAW resonator and conductor pattern is symmetrical.

4. An antenna duplexer of claim 1,

5 wherein said transmission filter includes a first SAW filter having a first series arm SAW resonator disposed at an outermost arm towards said antenna terminal, and

 wherein said first series arm SAW resonator includes a plurality of second series arm SAW resonators connected in series with each other.

10

5. The antenna duplexer of claim 4,

 wherein the first SAW filter further includes a third series arm SAW resonator, and

 wherein a series arm SAW resonator having a smallest capacitance

15 of said second series arm SAW resonators has a capacity equal to or larger than a capacitance of said third series arm SAW resonator.

6. The antenna duplexer of claim 4,

 wherein said first SAW filter further includes a first parallel arm

20 SAW resonator, and

 wherein said first parallel arm SAW resonator includes a plurality of second parallel arm SAW resonators connected in series with each other.

25 7. The antenna duplexer of claim 6,

 wherein said first SAW filter further includes a third parallel arm SAW resonator, and

1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0

wherein said first parallel arm SAW resonator is connected closer to said antenna terminal than said third parallel arm SAW resonator.

8. The antenna duplexer of claim 6, wherein a SAW resonator having a smallest capacitance of said second parallel arm SAW resonators has a larger capacitance than said third parallel arm SAW resonator.

9. The antenna duplexer of claim 4, wherein said reception filter includes a second SAW filter including a fourth series arm SAW resonator disposed at an outermost arm towards said input terminal.

10. The antenna duplexer of claim 9, wherein said fourth series arm SAW resonator includes a plurality of fifth series arm SAW resonators connected in series with each other.

11. The antenna duplexer of claim 10,
wherein said second SAW filter further includes a sixth series arm SAW resonator, and
wherein a SAW resonator having a smallest capacitance of said fifth series arm SAW resonators has a larger capacitance than said sixth series arm SAW resonator.

12. The antenna duplexer of claim 9, wherein said second SAW filter further includes a fourth parallel arm SAW resonator including a plurality of fifth parallel arm SAW resonators connected in series with each other.

20100227/88251-3

13. The antenna duplexer of claim 12,
wherein said second SAW filter further includes a sixth parallel
arm SAW resonator, and

wherein said fourth parallel arm SAW resonator is disposed closer
5 to said antenna terminal than said sixth parallel arm SAW resonator.